

First named inventor: Medin  
Serial no. 10/693,565  
Filed 10/25/2003  
Attorney docket no. 200205552-1

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In the claims

1. (currently amended) A method comprising:  
determining a property of air within an image-forming device based on a measured change in air temperature within the image-forming device, power supplied to a heating element of the image-forming device other than an image-forming mechanism of the image-forming device, and an air flow generated by an air-moving device, the air flow heated by the heating element; and,  
adjusting one or more parameters of the image-forming device based on the property of air determined, including maintaining a consistent air mass flow by the air-moving device for heating functionality thereof; and,  
using the air flow heated by the heating element to dry colorant on media applied within the image-forming device.
2. (original) The method of claim 1, wherein the property of air is air density.
3. (original) The method of claim 1, wherein the air-moving device comprises a fan.
4. (original) The method of claim 1, further comprising measuring a change in the air temperature within the device to yield the measured change in the air temperature within the device.
5. (original) The method of claim 4, wherein measuring the change in the air temperature within the device comprises utilizing a temperature sensor within the device.
6. (original) The method of claim 1, further comprising determining the power supplied to the heating element of the device.

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7. (original) The method of claim 1, further comprising determining the air flow generated by the air-moving device as a function of revolutions-per-minute (rpm) of the air-moving device.
8. (original) The method of claim 7, wherein the air-moving device includes a fan and determining the air flow generated by the fan as the function of the rpm of the fan comprises utilizing predetermined specifications of the fan.
9. (original) The method of claim 7, wherein the air-moving device includes a fan and determining the air flow generated by the fan as the function of the rpm of the fan comprises empirically determining the air flow generated by the fan as the function of the rpm of the fan.
10. (original) The method of claim 7, wherein the air-moving device includes a fan and determining the air density within the image-forming device comprises determining the air density as a function of the rpm of the fan.
11. (original) The method of claim 1, wherein determining the air density within the image-forming device comprises determining the air density as a function of the measured change in the air temperature within the device.
12. (original) The method of claim 1, wherein determining the air density within the image-forming device comprises determining the air density as a function of the power supplied to the heating element.
13. (original) The method of claim 1, wherein determining the air density within the image-forming device comprises determining the air density based on the equation where power is the

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power supplied to the heating element,  $C_p$  is a constant representing the specific heat of air,  $Q$  is the air flow generated by the fan, and  $\Delta T$  is the change in the air temperature within the device.

14. (original) The method of claim 1, wherein adjusting the one or more parameters of the image-forming device based on the air density determined comprises maintaining a relative pressure between a first side and a second side of media advancing through the image-forming device, based on the air density determined.

15. (currently amended) The method of claim 1, wherein adjusting the one or more of the image-forming device based on the air density determined comprises ~~maintaining a consistent air mass flow by the fan for heating functionality of the fan,~~ maintaining a consistent air mass flow by a second fan for cooling functionality of the second fan.

16. (currently amended) A method comprising:  
determining a measured change in air temperature within an image-forming device; and,  
adjusting at least one of power supplied to a heating element of the image-forming device other than an image-forming mechanism of the image-forming device, and an air flow generated by an air-moving device, the air flow heated by the heating element, to control air density within the image-forming device, including maintaining a consistent air flow mass by the air-moving device for heating functionality thereof; and,  
using the air flow heated by the heating element to dry colorant on media applied within the image-forming device,

wherein the air density within the image-forming device is based on the measured change in air temperature, the power supplied to the heating element, and the air flow generated by the air-moving device.

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17. (original) The method of claim 16, wherein the air-moving device comprises a fan.
18. (original) The method of claim 16, further comprising measuring a change in the air temperature within the device to yield the measured change in the air temperature within the device.
19. (original) The method of claim 16, wherein the air-moving device includes a fan, and adjusting at least one of the power supplied to the heating element of the image-forming device and the air flow generated by the air-moving device comprises adjusting at least an rpm of the fan to adjust the air flow generated by the fan.
20. (original) The method of claim 16, wherein the air density within the image-forming device is based on the equation  $\Delta T = \frac{P}{C_p Q}$  where power is the power supplied to the heating element,  $C_p$  is a constant representing the specific heat of air,  $Q$  is the air flow generated by the fan, and  $\Delta T$  is the change in the air temperature within the device.
21. (currently amended) An assembly for an image-forming device comprising:  
an air-moving device to generate air flow to dry colorant on media applied within the image-forming device;  
a heating element to heat the air flow, the heating element other than an image-forming mechanism of the image-forming device;  
a temperature sensor to measure a change in air temperature;  
a power source to supply power to the heating element; and,  
a controller to determine air density based on the air flow generated by the air-moving device, the change in air temperature, and the power supplied to the heating element by the power source,

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wherein the controller is to adjust one or more operating characteristics of the air-moving device based on the air density determined to affect one or more image-forming parameters of the image-forming device, including maintaining a consistent air mass flow by the air-moving device for heating functionality thereof.

22. (original) The assembly of claim 21, wherein the air-moving device is to generate the air flow to heat media to dry ink applied thereto within the image-forming device.

23. (original) The assembly of claim 21, wherein the controller is to determine the air density based on the equation where power is the power supplied to the heating element,  $C_p$  is a constant representing the specific heat of air,  $Q$  is the air flow generated by the air-moving device, and  $\Delta T$  is the change in the air temperature.

24. (original) The assembly of claim 21, wherein the fan includes an air-moving device and one or more operating characteristics of the fan adjusted by the controller based on the air density determined comprises a revolutions-per-minute (rpm) parameter of the fan.

25. (original) The fan assembly of claim 21, wherein the one or more operating characteristics of the air-moving device adjusted by the controller based on the air density determined comprises power supplied to the air-moving device.

26. (original) The assembly of claim 21, wherein the one or more image-forming parameters of the image-forming device affected by adjusting the one or more operating characteristics of the air-moving device based on the air density determined comprises a relative pressure between a first side and a second side of media advancing through the image-forming device.

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27. (original) The assembly of claim 21, wherein the one or more image-forming parameters of the image-forming device affected by adjusting the one or more operating characteristics of the air-moving device based on the air density determined comprises air mass flow by the air-moving device for heating functionality of the air-moving device.

28. (currently amended) A fan assembly for an image-forming device comprising:  
a fan to generate air flow to dry colorant on media applied within the image-forming device;  
a heating element to heat the air flow resulting in a change in air temperature, the heating element other than an image-forming mechanism of the image-forming device;  
a temperature sensor to measure the change in air temperature;  
a power input to couple the heating element to a power source to supply power to the heating element; and,  
means for determining air density based on the air flow generated by the fan, the change in air temperature measured by the temperature sensor, and the power supplied to the heating element by the power source through the power input, and for adjusting one or more operating characteristics of the fan based on the air density determined to affect one or more image-forming parameters of the image-forming device, including maintaining a consistent air mass flow by the fan for heating functionality thereof.

29. (cancelled)

30. (currently amended) The fan assembly of claim ~~[[29]]~~ 28, wherein the one or more image-forming parameters of the image-forming device affected by adjusting the one or more operating characteristics of the fan based on the air density determined comprises:

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a relative pressure between a first side and a second side of media advancing through the image-forming device; and,

air mass flow by the fan for heating functionality of the fan.

31. (currently amended) An image-forming device comprising:

an image-forming mechanism to form images onto media advancing through the image-forming device; and,

a fan assembly having one or more operating characteristics adjusted based on an air density determined based on air flow generated by the fan assembly, a change in air temperature, and power supplied to a heating element of the fan assembly other than the image-forming mechanism, to affect one or more image-forming parameters of the image-forming mechanism, including maintaining a consistent air mass flow by the fan assembly for heating functionality thereof.

wherein the air flow is heated by the heating element and dries colorant on the media applied within the image-forming device.

32. (original) The image-forming device of claim 31, wherein the image-forming mechanism is an inkjet-printing mechanism, such that the image-forming device is an inkjet-printing device.

33. (original) The image-forming device of claim 32, wherein the fan assembly is to generate the air flow to heat the media to dry ink applied thereto by the image-forming mechanism.

34. (currently amended) The image-forming device of claim 32, wherein the fan assembly is further to generate the air flow to exhaust ink aerosol away from the media.

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35. (currently amended) The image-forming device of claim 31, wherein the fan assembly is further to generate the air flow to establish a vacuum to hold down the media.

36. (original) The image-forming device of claim 31, wherein the air density is determined based on the equation  $\frac{P}{C_p \Delta T} = Q$  where power is the power supplied to the heating element,  $C_p$  is a constant representing the specific heat of air,  $Q$  is the air flow generated by the fan assembly, and  $\Delta T$  is the change in the air temperature.

37. (original) The image-forming device of claim 31, wherein the one or more operating characteristics of the fan assembly adjusted based on the air density determined comprises a revolutions-per-minute (rpm) parameter of the fan.

38. (original) The image-forming device of claim 31, wherein the one or more operating characteristics of the fan assembly adjusted based on the air density determined comprises the power supplied to the fan assembly.

39. (currently amended) The image-forming device of claim 31, wherein the one or more image-forming parameters of the image-forming mechanisms affected by adjusting the one or more operating characteristics of the fan assembly based on the air density determined comprises ~~at least one of:~~

- ~~——a relative pressure between a first side and a second side of the media; and,~~
- ~~——air mass flow by the fan assembly for heating functionality of the fan assembly.~~